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ABSTRACT

In 1992, a national survey was conducted to determine the percentage of the community college curriculum devoted to the non-liberal arts, to develop a taxonomy of non-liberal arts subject areas, and to ascertain the percentage of these courses which were transferable to research universities and comprehensive colleges and universities in five states. Replicating the methodology and using the same source materials as an earlier examination of the liberal arts curriculum, courses were tallied from the spring 1991 course catalogs and class schedules of 164 community colleges. Only those courses with definite times and meeting places were tallied, which excluded such offerings as laboratory, independent, and self-paced courses. A total of 45,360 sections were categorized, and the following 10 major non-liberal arts classifications were identified: Agriculture; Business and Office; Marketing and Distribution; Health; Home Economics; Technical Education; Engineering Technology; Trade and Industry; Personal Skills and Avocational Courses; Education; and Other. The study revealed that non-liberal arts offerings constituted 43.4% of the total 104,565 sections tallied. The Business and Office classification was the largest, accounting for 24.6% of the total non-liberal arts curriculum, while the Home Economics classification, which did not include consumer service related offerings, accounted for only 0.2%. Individual analyses of the transferability of non-liberal arts courses are provided for California, Texas, Illinois, North Carolina, and Florida. (MAB)

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NON-LIBERAL ARTS CURRICULUM STUDY

Results

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September 17, 1992

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METHODOLOGY

The purpose of the 1992 Non-Liberal Arts Curriculum Study is to determine the percentage of the curriculum which is devoted to the non-liberal arts versus. the liberal arts, to develop a taxonomy of non-liberal arts subject areas, to determine the percentage of the non-liberal arts courses offered in each of these major subject areas, and to calculate the percentage of courses from each of the ten non-liberal arts subject areas which transfers to both Research Universities I and to Comprehensive Universities and Colleges I.[1]

The data for this study were obtained from 164 colleges nationwide from Spring term 1991. These were the same schedules from which the staff at the Center for the Study of Community Colleges (CSCC) coded the liberal arts course offerings in the summer of 1991. Ten of the colleges were private or Indian-controlled and the rest were public colleges. Forty-eight of the colleges were small (less than 1500 students), 55 were medium (1500 - 6000 students) and 61 were large (over 6000 students). By using the same schedules, comparisons could be made between percentages of a college's liberal arts and non-liberal arts course offerings.

The study consisted of two "phases," the first of which classified and tallied non-liberal arts courses. A classification scheme was developed by the CSCC staff. This taxonomy was based largely on the major categories used by the National Center for Research in Vocational Education (NCRVE) at Berkeley, although specific course designations were determined by the CSCC staff. The ten major non-liberal arts areas are Agriculture, Business and Office, Marketing and Distribution, Health, Home Economics, Technical Education, Engineering Technology[2], Trade and Industry, Personal Skills and Avocational Courses, Education, and Other (see **TAXONOMY** section). Courses in the non-liberal arts were counted and assigned to one of the above ten categories.

When the content of a course was unclear from the course title or description in the schedule, the college's course catalogue was consulted, and in a few cases, contact persons at the colleges were telephoned for specific information on course content to assist in determining the proper coding category. In order to maintain reliability between coders, mandatory weekly meetings were held in which the staff discussed all problem coding areas and decided upon proper categories. Staff members involved in coding also traded schedules to review coding completed by other staff members in an effort to bring all areas of potential disagreement to light. Using the same format set

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[1]Research Universities I and Comprehensive Universities and Colleges I were defined in this study using the definitions of the 1987 edition of the Carnegie Foundation's A Classification of Institutions of Higher Education, p. 7.

[2]Engineering Sciences were coded under the liberal arts in the Spring 1991 National Curriculum Study. The Engineering Technology courses coded under this non-liberal arts study are those courses which may contain engineering theory and principles but are overall more occupationally-oriented and therefore not considered liberal arts courses.

for the liberal arts curriculum study, the following types of courses were *not* coded for the non-liberal arts: laboratory classes, modules and self-paced classes, individualized study, cooperative education, work-study, clinicals, practicums, field experience, and directed study classes. In order for a course section to be coded, a meeting time and place had to be designated.

The second phase of the study concerned calculating the percentage of courses in the non-liberal arts which transferred to both Research Universities I and Comprehensive Colleges and Universities I, using the Carnegie Classification for these designations (see footnote 1, this section). Illinois was the only state in which this scheme was not followed. A Doctoral Granting II institution, Illinois State University, was used instead of a Comprehensive Colleges and Universities I institution, because of the difficulty in obtaining Transfer Guides for this latter type of institution.[1] Any course at a community college is likely to be accepted by some four-year institution somewhere within the state for transfer credit. In order to avoid accumulating useless data showing that all community colleges courses are transferrable somewhere, we chose to calculate transferability to two specific types of four-year institutions: a "flagship" Research University and a Comprehensive College or University.

Since it would have been too time-consuming to collect Transfer Guides for all 164 community colleges participating in the study to two separate four-year institutions, we chose to further limit the study of the transferability of non-liberal arts courses to five states--California, Texas, Illinois, North Carolina and Florida. Out of the total 164 community colleges nationwide which participated in the non-liberal arts project, 73 are located in the above five states. Since these five states account for almost half (45%) of the national sample, transfer percentages obtained from just these states provide a reliable indication of which non-liberal arts courses will transfer nationally. Listed below are the Research Universities and the Comprehensive Colleges or Universities for which Transfer Guides were obtained:

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[1]Doctoral-Granting Universities II were defined in this study using the 1987 Carnegie Foundation's definition on p. 7 of A Classification of Institutions of Higher Education.

Four-Year Institutions Participating in the Transfer Phase of the Study

State	*Research Universities I*	*Comprehensive Colleges and Universities I*
California	University of California (system)	California State University (system)
Texas	University of Texas-Austin	Stephen F. Austin State Univ. or Southwest Texas State Univ.
Illinois	University of Illinois at Urbana-Champaign	Illinois State Univ.*
North Carolina	University of North Carolina at Chapel Hill	Appalachian State University or East Carolina University
Florida	Florida State University, Tallahassee	University of North Florida

(*Doctoral-Granting II institution)

In order to create a uniform basis of comparison between states, "transfer" was defined in this study as course-to-course transfer equivalencies, rather than "program" or "block" transfer of courses between institutions. If a course was listed as acceptable for transfer as general education credit, general elective credit, specific course credit in a major field, or a major field elective credit, from a community college to either a specified research university or comprehensive university, then the course was counted as a transferable course. We were concerned with discovering which courses a student could count on transferring to four-year institutions--even if that student had only taken a few community college courses.

Not all officials in the different states, however, think of transferability in terms of the transfer of a specific community college course for either general or elective credit at a particular four-year college. Several examples may serve to illustrate the differences. Officials in states such as Florida, for example, prefer to consider transfer in terms of "degree completer" patterns. Community college students are strongly encouraged to complete the associate's degree or 60 credits in a specified program before transferring to a four-year institution with junior-level standing. Therefore, obtaining specific Course Transfer Guides for Florida community colleges is difficult. In Illinois, one of the ways in which a course at a community college can be considerable "transferrable" is to be accepted for transfer credit by at least three of the state's universities. If three state universities "sign off" on a course's transferability, then all state public colleges and universities must accept that course for transfer credit. The system in California, however, *is* based on the transfer of specific courses to four-year institutions. In determining transfer in California, the University of California operates as one unified system and the California State University system operates as another. In almost all California community college catalogs and schedules, course transfer status to both the UC system and to the CSU system is clearly designated along with the course description. Since the method of

determining transferability of courses differs between states, a "generic" methodology for collecting this data was not possible. In some states we contacted the community college heads of counseling; in others we contacted articulation officers at the four-year institutions, and in one case we had to obtain Transfer Guides from postsecondary agency officials. In all five states we ended by contacting at least several offices to obtain all the information we needed.

Using the Transfer Guides collected, we were able to estimate the percentage of courses in each of the ten major non-liberal arts areas which transfers to four-year institutions. These results are provided later in this report, along with special comments and conclusions relevant to each of the five states.

TAXONOMY

The taxonomy used in this study to code courses in the non-liberal arts was based largely on the "Taxonomy of Academic and Vocational Courses for Less-than-4-Year Postsecondary Institutions" developed by the National Center for Research in Vocational Education (NCRVE) at Berkeley. Major categories were adopted from the NCRVE taxonomy and specific subject areas for inclusion into these categories were developed by staff at the Center for the Study of Community Colleges. The major categories and specific course areas are as follows:

60 Agriculture

Horticulture, agribusiness and crop production, forest products and other agriculture products, agricultural sciences, renewable natural resources, animal health technology, nursery operation

61 Business and Office

Accounting, taxes, business and management, secretarial and related (filing, typing, shorthand, 10-key calculations), labor law, will, trusts and estate planning, legal assistant, other business and office, air line ticketing and reservations

62 Marketing and Distribution

Real estate, fashion merchandising, salesmanship, auctioneering, advertising design layout, purchasing textiles

63 Health

Nursing, health sciences, allied health, CPR, emergency technician, nutrition, marriage and family counseling courses, drug counseling, working with juvenile delinquents, dental assisting, corrective and rehabilitative physical education or other physical therapy for the physically challenged

64 Home Economics

Home economics, sewing, cooking, preserving foods, home interior decorating, all home economics courses which are not focused on trade and industry and which are intended for one's personal use at home

65 Technical Education

Computer software applications (wordprocessing, spreadsheets, database programs, networking, desktop publishing--all *non-programming* computer applications); protective services including fire, police and law enforcement, lifeguard, and military science courses; communication technologies including journalism, TV, newspaper reporting, radio announcing, photo journalism, and other mass media courses, graphics

and offset printing; commercial photography

66 Engineering Technologies

Most of this category was coded under the Spring 1991 Liberal Arts Study. Engineering courses which were too occupationally-oriented to be coded in the liberal arts, however, were coded under non-liberal arts. These non-liberal arts engineering courses focus on engineering principles such as "Analog or Digital Fundamentals" or "AC/DC Current" or "Ohm's Law" as well as more practical subject matter. Examples: "Avionics" (theory of flight and practical aspects of flying an airplane) or "Industrial Electricity."

67 Trade and Industry

Construction; automotive; aviation engineering (concerning the manufacture of airplanes); surveying; drafting including CAD/CAM; other mechanics and repairers; welding and precision metal; other precision production; transport and materials moving; consumer/personal/ miscellaneous services including cosmetology, upholstery; hospitality industry courses including culinary arts and wines; pattern design and many apparel construction courses; travel and tourist agent

68 Personal Skills and Avocational Courses

Physical Education, freshman orientation, introduction to the library, parenting, fashion color analysis, career and life planning, self-appraisal courses

69 Education

Early childhood education, physical education instructor courses, coaching, children's literature, nanny courses, math or music or art for teachers, courses for future instructors of the emotionally and mentally challenged

70 Other

Social Services program training courses, library cataloguing procedures

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RATIO OF LIBERAL ARTS TO NON-LIBERAL ARTS

For the Spring 1991 National Liberal Arts Curriculum Study, 59,205 liberal arts course sections were tallied by staff at the Center for the Study of Community Colleges. In this study of the non-liberal arts, 45,360 sections were tallied. The total number of course sections coded in the two studies is 104,565. The ratio is 43.4% non-liberal arts to 56.6% liberal arts in the total community college curriculum.

In order for a course to be counted, it had to have a definite time and meeting place. Laboratory courses, including clinicals, practicums, field experience, independent study, and self-paced or modular classes, often do not have definite times and meeting places beyond the first class session and therefore were not included in the tallies for either the liberal arts or the non-liberal arts. Since laboratory classes occur with greater frequency in many non-liberal arts subject areas, their omission may at least partially account for the lower percentage of non-liberal arts courses in relation to the liberal arts. Laboratory classes are especially popular in many nursing and allied health programs, in technical education program classes such as computer literacy and data processing, and in trade and industry subject areas such as auto mechanics and cosmetology. In the liberal arts, however, fewer laboratory classes are offered. The largest liberal arts subject area offering laboratory classes is most likely music, where "applied" music classes, (often private lessons), were coded in the study as laboratory classes. Some laboratory classes are also offered in the hard sciences and in foreign language classes, though separate language laboratory classes have declined in popularity and, overall, few sections are offered.

RESULTS OF PHASE 1: THE NON-LIBERAL ARTS CURRICULUM

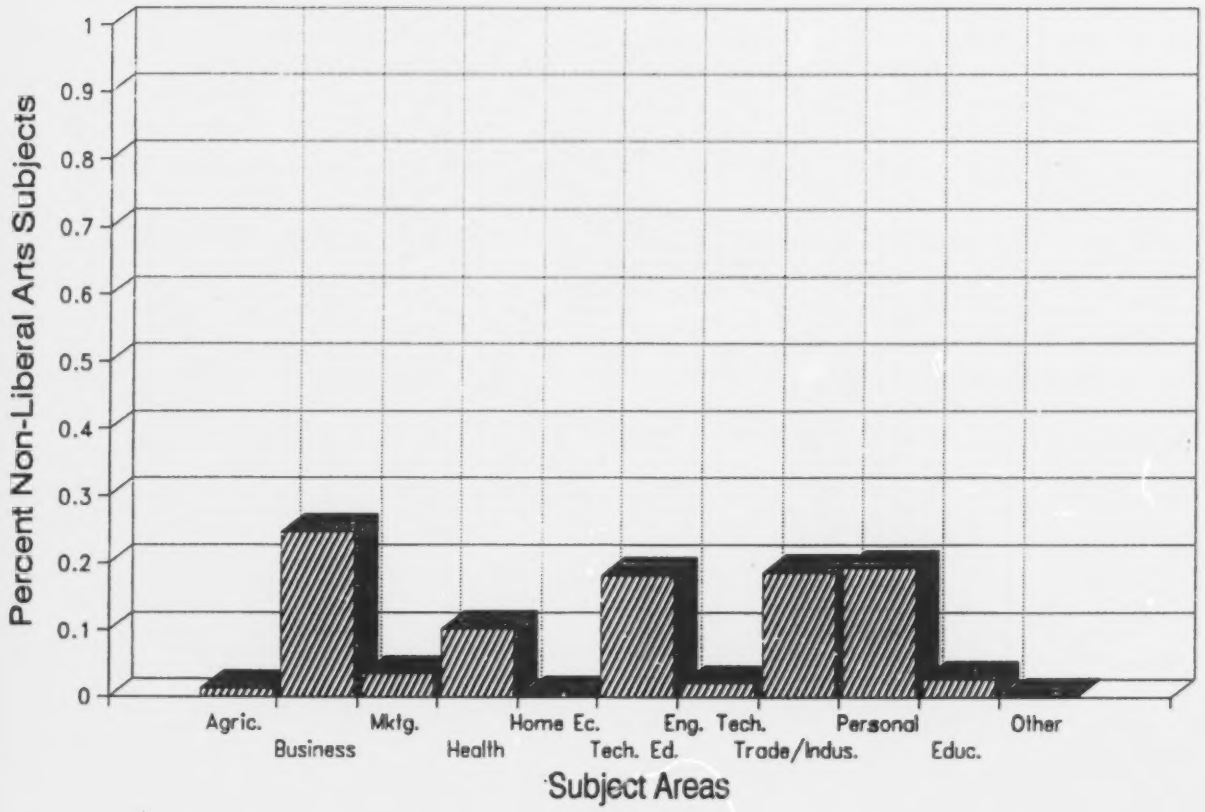
A taxonomy dividing the non-liberal arts into ten broad curricular areas was developed by CSCC staff based largely upon categories developed by the National Center for Research in Vocational Education at Berkeley (see TAXONOMY section, p. 5.) The table on the following page presents the number of course sections offered in each of the ten non-liberal arts areas and gives the percentage of the total non-liberal arts curriculum occupied by each subject area.

One category bears special note. Very few "true" Home Economics courses were found, for many sewing and tailoring, food preparation and food preservation, and interior decorating courses were more oriented toward providing training for students in consumer service areas than toward providing skills to be used in the home. Only courses in baking, cooking and sewing for one's personal use *at home* were included under Home Economics. Classes such as Pattern Design, Fabrics, Wines, Culinary Arts, and Refrigeration for Restaurants were often clearly Trade and Industry classes, as judged by both course titles and course descriptions. Nutrition classes were often judged to be appropriately coded under "Health," while Parenting classes were coded under Personal and Avocational Skills. Using this taxonomy, then, the category "Home Economics" all but disappeared, accounting for only .2% of the non-liberal arts curriculum.

Number of Sections Offered and Percent of Non-Liberal Arts Curriculum, U.S. Colleges, N=164

Subject	No. Course Sections	% of Non-Liberal Arts
Agriculture	529	1.2%
Business & Office	11, 156	24.6%
Marketing & Distribution	1, 524	3.4%
Health	4, 629	10.2%
Home Economics	106	0.2%
Technical Education	8, 233	18.2%
Engineering Technology	889	2.0%
Trade & Industry	8, 427	18.6%
Personal Skills	8, 643	19.1%
Education	1, 147	2.5%
Other	77	0.2%
TOTAL ALL SUBJECTS	45, 360	

Percent of Non-Liberal Arts by Subject
(U.S. N = 164)



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RESULTS OF PHASE 2: PERCENTAGES OF NON-LIBERAL ARTS SUBJECT AREAS WHICH TRANSFER TO FOUR-YEAR INSTITUTIONS

California

Data

The percentage of transferrable non-liberal arts courses in the state of California was based on information obtained from thirty community colleges and two university *systems*. The State of California requires that community colleges clearly designate which courses will transfer to any of the nine campuses of The University of California system or to any of the twenty campuses of the California State University system. Most community college course schedules or catalogs clearly state "UC Transfer" or "CSU Transfer" next to the course title or course description. Few community colleges, however, state to which of the nine UC campuses or to which of the 20 CSU campuses a course will transfer. Students are often advised to check with the counseling offices in order to locate a particular campus to which a course will transfer.

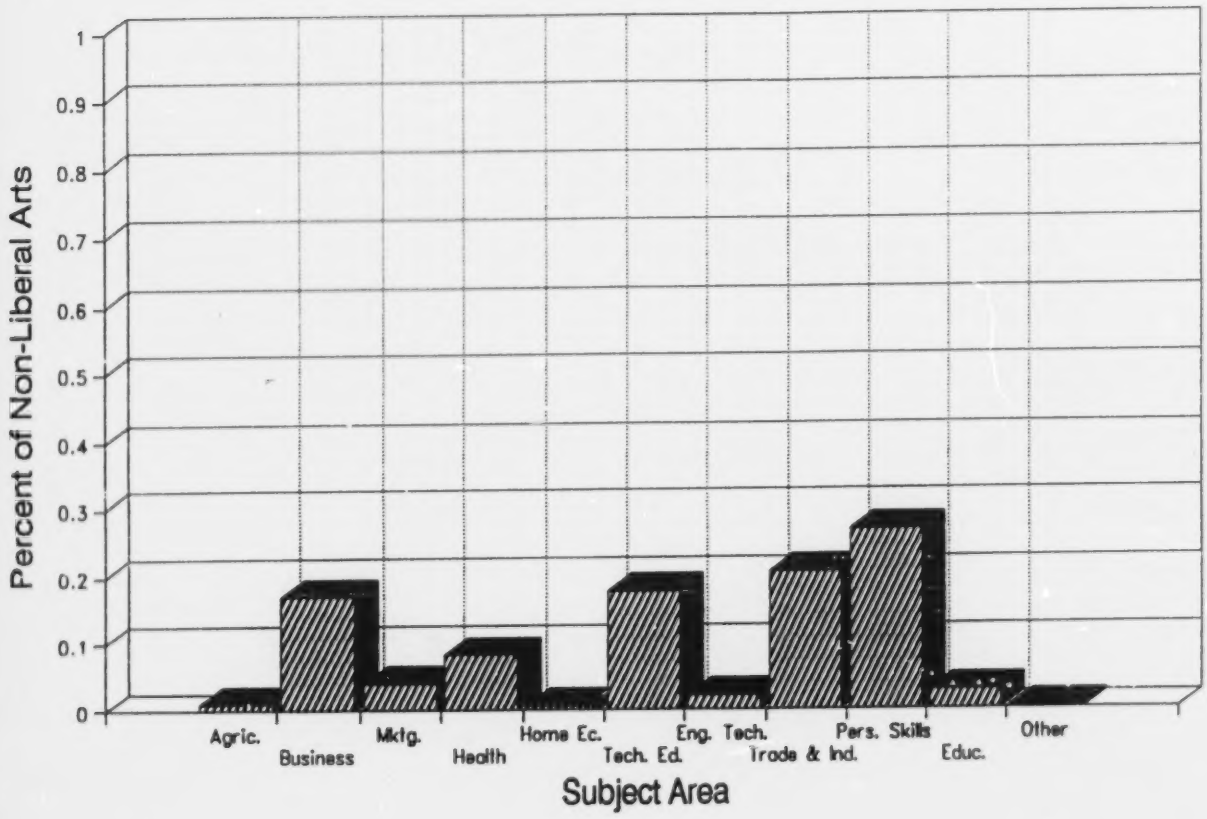
Obtaining transfer guides for both systems from the thirty California community colleges which participated in the system then was simply a matter of looking in the college schedule of courses or course catalog. In only two cases did transfer guides have to be requested from the Student Academic Services division of the University of California's Office of the President in Sacramento.

The tables and graphs below provide the following information: 1) the percentages of each of the ten non-liberal arts areas as part of the total non-liberal arts curriculum, and 2) the percentage of each of the ten non-liberal arts areas which transfer to the UC and the CSU systems.

Number of Course Sections and Percent of Non-Liberal Arts, California Colleges, N=30

Subject Area	No. of Sections	Percent of Total NLA
Agriculture	124	1.0%
Business & Office	2, 142	17.0%
Marketing & Distribution	499	4.0%
Health	1, 043	8.3%
Home Economics	70	0.6%
Technical Education	2, 208	17.5%
Engineering Technology	262	2.1%
Trade & Industry	2, 567	20.3%
Personal Skills	3, 346	26.5%
Education	354	2.8%
Other	17	0.1%
TOTAL ALL SUBJECTS	12, 632	

Percent of Non-Liberal Arts by Subject
(California Colleges, N = 30)



Number of Course Sections and Percent of Non-Liberal Arts, California Colleges, N=30

Transfer Subject Area	CSU	UC
Agriculture	64.5%	21.0%
Business & Office	61.0%	23.0%
Marketing & Distribution	70.3%	1.6%
Health	54.3%	16.3%
Home Economics	47.1%	12.9%
Technical Education	52.8%	11.0%
Engineering Tech.	62.6%	5.7%
Trade & Industry	35.7%	3.7%
Personal Skills	88.0%	76.7%
Education	70.6%	5.6%
Other	94.1%	35.3%
Overall Transferability	61.7%	28.9%

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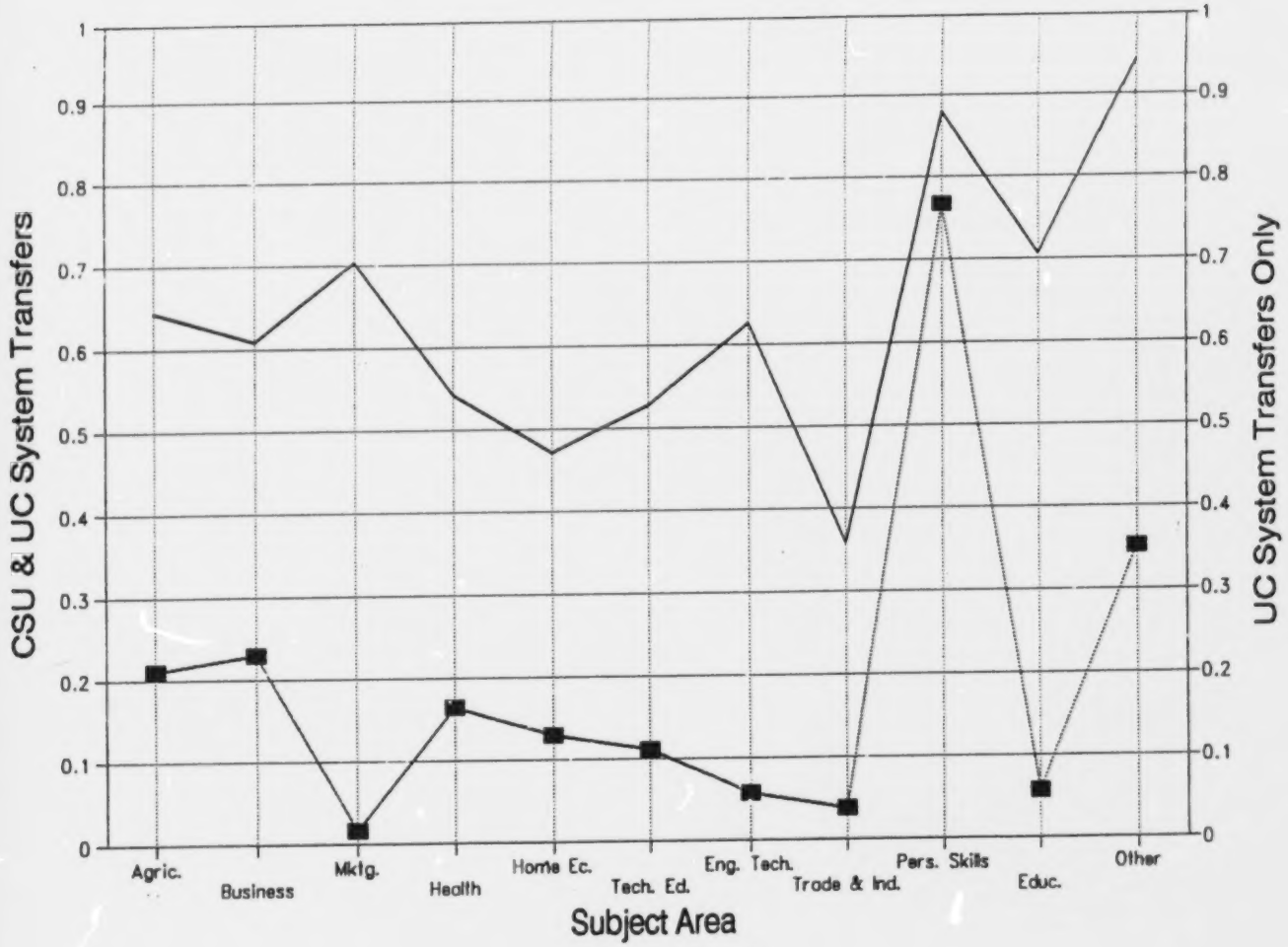

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The Non-Liberal Arts Curriculum

Personal Skills and Avocational Courses is the largest non-liberal arts area in California community colleges (26.5%), followed by Trade and Industry courses (20.3%), Technical Education (17.5%) and Business and Office (17.0%). These four areas account for 81.3% of the total non-liberal arts curriculum. The difference between the results for California and the results for the nation concerns the rank ordering of the non-liberal arts areas: in California Personal and Avocational Skills is the largest non-liberal arts area (26.5%), while nationally this category drops to 19.1%. In California, Business and Office courses account for 17.0% of the non-liberal arts curriculum, while nationally Business and Office courses comprise the largest portion of the non-liberal arts curriculum (24.6%). The table below shows the differences between the four largest non-liberal arts subject areas for the U.S. as a whole and for California:

Percentages of Non-Liberal Arts Curriculum by Largest Subject Areas

Subject Area	U.S.	California
Business and Office	24.6%	17.0%
Personal Skills	19.1%	26.5%
Trade & Industry	18.6%	20.3%
Technical Education	18.1%	17.5%

Paralleling national trends, six areas account for only a small proportion (10.6%) of the total non-liberal arts curriculum in California: Marketing and Distribution (4%), Education (2.8%), Engineering Technology (2.1%), Agriculture (1%), Home Economics (.6%), and Other (.1%). The remaining 8.3% is accounted for by Health courses.

Transfer of Non-Liberal Arts Courses to UC and CSU Systems

Except in the area of Personal Skills and Avocational courses, transferability in the non-liberal arts from California community colleges are considerably lower to the UC system than to the CSU system. Because the UC system accepts almost all physical education courses at community colleges, only 11.3 percentage points separate UC acceptance of transfer credit of Personal Skills courses (76.7%) from CSU acceptance rates (88%). In the other nine non-liberal arts subject categories, the differences in rates of acceptance for transfer credit between the two systems range from 32% to 68.7%. The UC system is clearly more selective in allowing transfer credit for non-liberal arts courses than the CSU system.

Several areas bear specific mention. In the CSU system, at least half of all non-liberal arts courses in the ten different areas do transfer, with the noticeable exception of Trade and Industry (35.7%). The other area of relatively low transfer to the CSU system is Home Economics (47.1%). This course transfer percentage may not be very reliable, however, since so few

courses are coded under this category (70 sections in Home Economics out of a total 12,632 total non-liberal arts sections for California).

Conclusion

In general, the results for California community colleges regarding proportions of the curriculum devoted to different non-liberal arts areas closely resembles national trends. Differences worth noting occur in only two of the four largest discipline areas, Personal and Avocational Skills (9.4% difference) and Business and Office (7.6% difference). In the other eight non-liberal arts areas, differences between California and the U.S. range from a high of 1.7% (Trade and Industry) to .07% (Engineering Sciences and Technology).

The other clear trend from the California data is that, not surprisingly, the more research-based UC campuses are considerably more selective in accepting non-liberal arts courses for transfer than are the CSU institutions.

Texas:

Of the 16 original community colleges in the study, eleven sent in transfer agreements from (1) University of Texas at Austin, and (2) Stephen F. Austin State University or Southwest Texas State University. Using the transfer agreements provided by the participants, the Spring 1991 class schedules of the eleven community colleges were coded so that non-liberal arts sections could be categorized as transfer and non-transfer. The transfer agreements from U.T. Austin categorized courses as transferable for credit, or as 'N/C' no credit. Courses at U.T. Austin which were categorized as transferable for credit were counted as transferable. Transfer agreements from SFASU categorized courses as transferable for credit or as 'NT' not transferable. Courses which were transferable for credit were counted as transferable. The agreements from STSU categorized courses as directly transferable, 'ELNA' elective non-advanced, 'Act' activity, 'NT' non-transferable, or 'T&V' technical and vocational. Courses which were directly transferable, 'ELNA,' or 'Act,' were counted as transferable. The overall transfer rates for non-liberal arts sections are as follows:

VOCATIONAL AREAS	Total Number	(1) U of T at Austin	(2) SFASU or STSU
60 AGRICULTURE	25	16.0%	28.0%
61 BUSINESS AND OFFICE	653	30.3%	41.0%
62 MARKETING AND DISTRIBUTION	66	39.4%	43.9%
63 HEALTH	381	6.8%	7.4%
64 HOME ECONOMICS	7	85.7%	85.7%
65 TECHNICAL EDUCATION	425	56.2%	71.1%
66 ENGINEERING AND SCIENCE TECHNOLOGIES	61	0.0%	0.0%
67 TRADE AND INDUSTRY	657	5.8%	5.8%
68 PERSONAL SKILLS AND AVOCATIONAL COURSES	447	99.8%	100.0%
69 EDUCATION	46	17.4%	50.0%
70 OTHER	0	0.0%	0.0%
Overall Rate		35.3%	41.6%

Lee College sent in a course transfer guide that compared several four-year schools side by side. This guide lists all courses offered at Lee College and whether or not a particular course is 'T' transferable, 'NT' Not transferable, '****' does not correspond directly but does transfer, or '#' must be referred to the counseling center. Courses which were 'T' or '****' were counted as transferable. These statistics are for courses offered, not sections, and are not directly comparable to other statistics in this study. However, the percentages illustrate differences among institutions which accept courses from one community college. Transfer rates for (1) all courses offered and (2) non-liberal arts courses only are as follows:

COURSES WHICH TRANSFER FROM LEE COLLEGE

Four Year Inst. Public	(1) All courses Offered	(2) Non-liberal Arts
Sam Houston	45.7%	27.5%
Texas A & M	36.9%	16.2%
U. of H. Clear Lake	28.8%	15.8%
U. of H. Downtown	52.8%	33.8%
U. of H. Main	93.3%	93.5%
Stephen F. Austin	46.9%	28.9%
U. T. Austin	40.6%	21.6%
Texas Tech	14.2%	5.5%
Southwest Texas State	97.4%	97.3%
Lamar	41.6%	21.2%
Univ. of North Texas	73.2%	64.4%
East Texas State	92.9%	92.2%
Texas Woman's	62.9%	50.8%
Private		
Baylor	12.7%	2.5%
Houston Baptist	11.6%	6.5%

Transfer agreements from four year institutions would list entire departments as either 'NC' or as 'Technical and Vocational.' Few Allied Health courses counted for transfer, whether it was Emergency Medical Technician, Nursing, or Respiratory Therapy. Few Trade and Industry courses would count for transfer. No

Welding or Automotive courses transferred; therefore, Health and Trade and Industry had lower transfer rates than for California. Criminal Justice transfers to STSU but not U.T. Austin. Business Administration courses such as accounting principles and business law transfer, but Business Management and Office Management courses did not transfer. No Nursing or Vocational Nursing courses transferred.

Overall, vocational areas with the highest transferability included physical education, technical education, and business. Physical Education counts as activity units and is generally acceptable for comprehensive and research institutions. Technical Education includes introductory computer literacy courses and some courses in basic and advanced computer applications which transferred at a high rate. Criminal Justice (part of Technical Education) transferred to the comprehensive but not the research institution. Business and Office included accounting principles and business law courses which transferred at a high rate.

Texas is in the process of developing a common numerical code for courses which will indicate whether or not a course is transferable. The colleges which took part in this study were at various stages of adapting the new system. The Lee College information revealed that the two private universities had much lower rates than the public institutions. Each Texas community college has separate transfer agreements with each four year institution.

Data

The percentage of transferrable non-liberal arts courses in the state of Illinois was based on information obtained from four community colleges and two four-year institutions. The University of Illinois at Urbana-Champaign was the flagship research university (Research University I category from the Carnegie Classification). Transfer Guides for institutions in the Comprehensive Colleges and Universities I category, however, were unavailable, though "program transfer guides"[4] were obtainable from several institutions in this category. "Program transfer guides" did not fulfill our purposes, however, since a complete listing of non-liberal arts courses which transfer from a community college to a four-year institution is difficult to glean from these guides. Transfer Guides from a Doctorate-Granting II institution, Illinois State University, were available, however, and these guides were used to calculate the CSU-equivalent institution transfer rate for the state of Illinois. The Deputy Director for Research and Planning at the Illinois Community College Board also informally confirmed that very different course transfer rates existed for the University of Illinois and Illinois State University.[5]

Listed below are the percentages of non-liberal arts courses which transfer from four Illinois community colleges to the two Illinois universities used in this study:

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[4]"Program transfer guides" list those courses which are recommended for community college students who intend to transfer to a specific major, such as Business or Journalism, at a four-year institution. These guides are inadequate sources of determining what percentage of non-liberal arts courses are likely to transfer to four-year institutions since they often list only general education credits and a few "elective" or major area requirements. Additional non-liberal arts courses which may transfer to the four-year institution could easily be overlooked in these "program transfer guides."

[5]Virginia K. McMillan, Deputy Director of Research and Planning, Illinois Community College Board, April 17, 1992, personal communication.

Table 1: Percent of Transferrable Non-Liberal Arts Course Sections

Community College	University of Illinois at Urbana-Champaign, Research University I	Illinois State University, Doctorate-Granting University II
Triton College	19.1%	80.3%
Wilbur Wright College	23.8%	N.A.*
Daley College	N.A.	79.4%
Black Hawk College	N.A.	79.0%

* N.A. = Not Available

The results of this study also indicate the degree to which courses in the different non-liberal arts areas tended to transfer to either a major research institution or a state university. Listed below is a comparison of the ten non-liberal arts categories of courses which transferred from Triton College to the University of Illinois at Urbana-Champaign and to Illinois State University, respectively.

Table 2: Number of Non-Liberal Arts Courses Transferrable to Different Types of Four-Year Institutions

Non-Liberal Arts Subject Area	Total # of Course Sections Offered at Triton College	Number Transfer-able to the University of Illinois	Number Transfer-able to Illinois State University
Agriculture	10	0	10
Business and Office	173	68	126
Marketing and Distribution	46	0	43
Health	160	0	56
Home Economics	0	0	0
Technical Education	219	22	211
Engineering and Science Technologies	31	0	31
Trade and Industry	174	15	159
Personal Skills and Avocational Courses	82	66	79
Education	19	4	19
Other	0	0	0
TOTAL	914	175	734
PERCENT TRANSFERRABLE		19.1%	80.3%

The highest transfer area in Illinois for both types of four-year institutions is Business and Office, due to the high number of Accounting and Business Administration courses which transfer. Personal Skills and Avocational Courses is another area in which a substantial number of courses transfer, though it lags behind Business and Office. Under Personal Skills, Physical Education and Personal Health Education courses compose the bulk of transferrable courses. Very few of the non-liberal arts Health classes, however, carry transfer credit to either four-year institution. Nursing courses, surgical technology, respiratory care, and X-ray technology do not transfer. At the University of Illinois at Urbana-Champaign, *no* Health courses transfer. While a few Health courses do transfer to Illinois State University, no nursing or pharmacology courses transfer.

Differences in the transfer rates of non-liberal arts courses between the research university and the state university were most noticeable in two subject areas: Technical Education and Trade and Industry. While only 10% of the total 219 Technical Education courses offered at Triton College transferred to the University of Illinois at Urbana-Champaign, an astounding 96.3% of these courses carried transfer credit to Illinois State University. The bulk of these courses were data processing and computer software applications courses. In the Trade and Industry area, only 8.6% of the total 174 courses in this area offered by Triton College carried transfer credit to the University of Illinois at Urbana-Champaign, while 91.3% of these courses transferred to Illinois State University. Architecture courses were the only Trade and Industry courses accepted for transfer credit to the University of Illinois at Urbana-Champaign, while various Trade and Industry areas including Welding Technology, Auto Technology, Diesel Theory, and Computer-Assisted Drafting and Computer-Assisted Manufacturing courses transferred to Illinois State University.

Peculiarities

Calculating the rate at which non-liberal arts courses transfer to four-year institutions in the state of Illinois is problematic, since six different types of articulation patterns are possible. Courses may transfer for credit in a variety of ways:

1) by "degree completion" which transfers students into the four-year institution at junior-level standing when they complete an A.A. or an A.S. degree;

2) by "discipline groups," such as art, music, or business (called "program transfer" in this paper);

3) by agreement between pairs of institutions concerning certain majors;

4) by articulation agreements concerning individual courses (called "course transfer" in this paper);

5) by an overall state-mandated policy concerning general requirements for the A.A. and A.S. degrees;

6) and by concurrence among at least three universities that a course at a community college should carry transfer credit.

The non-liberal arts courses which were tallied in this study met pattern number four above. Many of the courses which carry transfer credit

in the other patterns are liberal arts courses and therefore were not considered in this study. Fortunately, specific transfer guides listing "course transfer" (pattern #4) were available for both Illinois State University and the University of Illinois, so that few non-liberal arts courses went uncounted in this study for the four community colleges in Table 1.

Conclusion

Two very different rates of course transfer credit to a flagship research university (19.1%) and to a doctorate-granting institution (80.3%) are indicated by the results of this study. The University of Illinois at Urbana-Champaign is more restrictive in accepting non-liberal arts courses for transfer credit compared to Illinois State University. This tendency parallels that of California, with the University of California system showing much more selectivity in admitting courses for transfer than the California State University system.

Major differences exist not only in the rate of acceptance of non-liberal arts courses for transfer credit at different types of four-year institutions, but also in specific subject areas accepted for transfer. In addition to the differences in the areas of Technical Education and Trade and Industry, other variances were obvious. All Engineering Technology courses were acceptable for transfer credit at Illinois State University, as were almost all Marketing and Distribution courses, while none of these two subject areas were acceptable at the University of Illinois at Urbana-Champaign.

Overall, the results indicate that in Illinois considerable differences exist between the state's flagship research institution and one of the state universities concerning community college courses accepted for transfer credit.

NORTH CAROLINA

The state of North Carolina has 16 four year state institutions. None of these institutions are part of a particular system. Although some share similarity within their names, each institution has their own separate admissions requirements and policies. Presently, nothing is standardized.

The transferability of non-liberal arts classes from 5 community colleges within the state was studied. It was realized that community college transfer focused most closely on transferring to a four year institution within the region that the community college was located. Thus the number of transfer agreements between two and four years institutions are limited.

Three four year state institutions were designated for this study; UNC Chapel Hill, Appalachian State University and East Carolina University. UNC Chapel Hill is in an equivalent category with the University of California system, and Appalachian State and East Carolina are in an equivalent category with the California State University system. Appalachian State is located in the western part of the state.

COMMUNITY COLLEGES USED IN STUDY:

*Coastal Carolina Community College - Jacksonville, NC
*Edgecombe Community College - Tarboro and Rocky Mount, NC
*Pitt Community College - Greenville, NC
*Sampson Community College - Clinton, NC
*Western Piedmont Community College - Morganton, NC

Following are the percentages of non-liberal arts course offered that are transferable to the designated four year institutions.

Community College	UNC Chapel Hill	Appalachian State Univ.	East Carolina University
Coastal Carolina	13.7%	11.7%	16.1%
Edgecombe	1%	.7%	1%
Pitt	NA	NA	10.9%
Sampson**	8.8%	3.8%	3.8%
Western Piedmont	13.7%	78.2%*	NA

(Also of interest: Pitt Community College has 12.8% of its non-liberal arts classes transferring to North Carolina State University which is categorized as being similar to UNC Chapel Hill and Edgecombe which is fairly close to UNC Wilmington transfers 4.3% of its non-liberal arts classes.)

* This large percentage is a result of Western Piedmont College

being the number one junior feeder institution to Appalachian State University. Appalachian State therefore has developed a guide that determines transferability on a course by course basis.

**Sampson Community College offers more transferable classes than this table indicates, however few were offered during the quarter term used in this study.

Categories transferring to UNC Chapel Hill

63 Health
68 Personal and Avocational - These were all Physical Education classes with the exception of some Library Research Skills courses if they were offered.
69 Education

Categories transferring to Appalachian State University

*61 Business and Office
*62 Marketing and Distribution
*63 Health
*65 Technical Education
*66 Engineering and Science Tech
*67 Trade and Industry
68 Personal and Avocational (all PE)
69 Education
*indicates courses only transferable from Western Piedmont

Categories transferring from East Carolina University

61 Business and office (all Accounting classes)
63 Health
65 Technical Education (computer classes)
68 Personal and Avocational (All PE with the exception of some Library Research Skills classes.)

TRANSFERRING TO UNC CHAPEL HILL

To transfer to UNC Chapel Hill, students are advised to attend two years at a junior institution to fulfill GE requirements. The transfer requirement sheets that have been developed solely address GE courses. PE classes, and occasionally a health class, a library research skills class and an education class are the only non-liberal arts listed on the GE equivalency transfer sheets. No course by course equivalency guides have been established.

Technical, vocational and business type courses DO NOT transfer. Also, they do not transfer what they don't teach ie: engineering and forestry.

Transcripts from schools that do not have GE transfer equivalency guides are evaluated on a course by course basis. These

evaluations only take into account liberal arts courses, and those exceptions previously mentioned.

There are transfer equivalency sheets developed for BA degrees, BS degrees in Business Administration and BS degrees in health related fields such as Nursing, PT, Pharmacy and Dental Hygiene. The preparatory work for the BS majors is limited to liberal arts courses with the students taking all actual major courses at UNC Chapel Hill.

APPALACHIAN STATE UNIVERSITY

As with UNC Chapel Hill, students are advised to attend two years at a junior institution fulfilling GE requirements in order to transfer to Appalachian State.

The transfer equivalency sheets that have been established solely include GE classes. All are liberal arts courses with the exception of PE. Non GE courses are evaluated by reviewing course descriptions individually to determine if elective credit can be awarded.

Vocational and technical courses "generally do not transfer," however certain Business courses may transfer at the lower level such as Accounting, Introduction to Business Information Systems and Business Law.

As shown previously transferring from Western Piedmont Community College is an exception. Here, a course by course equivalency transfer guide has been established due to the fact that it is the number one transfer feeder institution into Appalachian State.

EAST CAROLINA UNIVERSITY

If a student is enrolled in the college transfer curriculum program for the Freshman and Sophomore years their classes are accepted without question. The courses in the college transfer curriculum are all GE's.

Technical and vocational type courses are only transferable if the student pursues the same technical degree at East Carolina. EXAMPLE: If a student has a two year technical degree in Electronics from a community college and they go on to pursue an Electronics degree from East Carolina only then will some of their electronics courses transfer.

Transferability of coursework outside the liberal arts areas is usually determined on a course by course basis and is largely dependant upon the student's chosen field of study. The Nursing, Human Environmental Sciences and Business programs all determine community college transferability through school to school negotiations on a course by course basis. Little of this is formalized and most is determined after submission of a transfer

application. There is little consistency.

ADDITIONAL NOTES

*A big problem to begin with in transferring coursework from the community colleges to the four year institution is that the community college are on quarter systems and the four years institutions are on semester systems. Total equivalency is difficult to determine.

*Of the total number of classes counted as transferring to UNC Chapel from these community colleges (74), 78% of them were from the category of personal and avocational. The majority are PE classes.

*Of the total number of classes counted as transferring to Appalachian State from these community colleges (200), 30% came from the personal and avocational category. If Western Piedmont is excluded, the percentage increases to 97% out of 35 classes counted.

*Of the total number of classes counted as transferring to East Carolina from these community colleges (76), 59% are from the personal and avocational category.

SUMMARY

North Carolina is just starting to establish structured transfer guidelines from their community colleges to their four year institutions. The ultimate goal with a projected deadline of 1995, is to have uniform course numbers among the community colleges and have total course transferability guides developed between many four year institutions and community colleges. Until then however, transferability will continue to be determined by GE equivalency guides that exclude almost all non-liberal arts coursework.

The few anomalies that exist primarily due to location, indicate that there is the possibility that more non-liberal arts course categories can actually transfer when course by course evaluations are created. Until then though, the percentages of the transferability of non-liberal arts classes from community colleges to four year institutions within the state of North Carolina will remain weak.

FLORIDA

The Florida higher education system encourages its students to get A.A. degrees before transferring. Once a student receives the degree, it is assumed that all the general education requirements are met, thus, all units (60-62) transfer. Instead of looking at whether individual courses transfer or don't transfer from a community college to a senior institution, the whole two year degree is taken. Therefore it was extremely difficult to get any information on course by course transfer from the community colleges or four year institutions.

We paired Miami-Dade with Florida International University (FIU) to get an idea of the comprehensive university transferability of non-liberal arts courses, and North Florida Junior College with Florida State University (FSU) to get similar information on the research university.

Data

The transfer rates of non-liberal arts classes are as follows:

North Florida Junior College/FSU (research university equivalent)	83.7%
Miami-Dade/FIU (comprehensive college equivalent)	70.7%

What is interesting to note is the transfer rate of non-liberal arts courses to a research university is higher than that of a comprehensive university. This is probably due to the fact that FIU does not accept P.E. courses for credit and FSU does. If a student enters FIU with 62 units (A.A./A.S.), the 2 units of P.E. are dropped because FIU does not have a P.E. requirement at their campus. FSU, on the other hand, does accept the 2 units of P.E. If the community college accepts P.E. as credit, so does FSU.

Also contributing to the higher transferability of non-liberal arts courses to a research university is the curriculum offered at North Florida Junior College. There it is mostly liberal arts while at Miami-Dade, there are many more voc./tech courses offered. Therefore, most of the classes offered at North Florida Junior College are transferrable. The non-liberal arts courses which did transfer were "liberal-arts" type courses. (e.g. Accounting, Computer Science) Looking at our taxonomy of non-liberal arts courses, North Florida Community College only offered courses falling under 5 of our 11 subject areas: 61-*Business and Office*, 61-*Health* (1 course), 65-*Technical Education*, 67-*Trade and Industry* (1 course), and

68-*Personal Skills and Avocational Courses*. Under our taxonomy at Miami-Dade, courses were offered in all subjects areas except 64-*Home Economics* and 70-*Other* (another small category).

At Miami-Dade, the data reflected a large number of category 68 (*Personal Skills and Avocational Courses*) courses which transferred to FIU (92 of the 149 category 68 courses). This seemed unusual since P.E. courses usually make up the majority of this category, and FIU does not accept P.E. courses as credit. After some checking, it was found that the majority of the transferrable category 68 courses were *Psychology 1000-Individual Transition* (55/92). Another course which had a lot of offerings under category 68 was *Student Life Skills 1501-Student Development* (17 sections).

Peculiarities

Florida's system is set up with an emphasis on program to program articulation/transfer. The push is for students to get their A.A. degree before transferring to a senior institution. If a student decides on a major at while attending a community college, there is a computer system which assists them in picking courses they should take. The system lets the student know what courses are transferrable and non-transferrable to a particular senior institution by **major only**.

The colleges in Florida rely on the common course numbering system. All higher education institutions in Florida use the same numbering system for their courses. For example the course number ENC1100-Introduction to English Composition, is used at all higher education institutions. ENC1100 is considered the same course at all higher education institutions offering it and is also transferrable.

If a community college offers a course that a senior institution does not offer, then the two institutions work out their own agreement as to the transferability or equivalency of that course (school by school articulation agreements).

Conclusions

Florida's common course numbering system enables institutions to quickly find out which courses are transferrable from one institution to another. Much of the transfer of courses is done on a program by program basis. Courses are accepted in toto for credit at a senior institution if a student fulfills an A.A. degree at a community college. Looking at Miami-Dade and North Florida Junior College, it appears that the bulk of non-liberal arts transfer courses fall under 61-*Business & Office*, 65-*Technical Education*, and 65-*Personal Skills*. In addition, to these 3 subject areas, Miami-Dade transferred many non-

liberal arts courses under 67-*Trade and Industry* and 69-*Education*. Even after examining these two community colleges, it still does not seem clear whether a pattern, if any, exists as to the type of non-liberal arts courses that transfer from community colleges to senior institutions in Florida or to the type of senior institutions that these courses transfer to. The emphasis on program to program articulation makes this difficult. Transferability of non-liberal arts courses in Florida seems to depend on the type of A.A. degree offered at the community colleges and individual agreements between each community college and each senior institution.